CS 62 Quiz 6

April 3, 2015

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Define *parallelism*. Define *concurrency*.

2. Consider carefully the following code for the BankAccount class:

public class BankAccount{

 private int balance = 0;

synchronized int getBalance(){

 return balance;

 }

synchronized void setBalance(int x) {

 balance = x;

 }

void withdraw(int amount) {

 int b = getBalance();

 if(amount > b)

 throw new WithdrawTooLargeException();

 setBalance(b-amount);

 }

 ...

}

If multiple threads tried to access the same bank account, it is possible to have:

1. bad interleavings but no data races
2. data races but no bad interleavings
3. **both** bad interleavings and data races
4. **neither** bad interleavings nor data races